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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,955	12/30/2004	Kasper Kokkonen	4819-4735	7370
27123	7590	10/04/2007		
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER YANG, JIE	
			ART UNIT 1742	PAPER NUMBER
			NOTIFICATION DATE 10/04/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/519,955

Applicant(s)

KOKKONEN ET AL.

Examiner

Jie Yang

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/30/2004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Applicant's election with traverse of "Group I—Claims 1-13, drawn to an apparatus for feeding an anode into a metallurgical smelting reactor" in the reply filed on 09/17/2007 is acknowledged. The traversal is on the ground(s) that Group I and II having more common special feature except "feeding an anode into a metallurgical smelting reactor", for example, "bending element" and "radius of curvature". This is not found persuasive because the limitations of "bending element" and "radius of curvature" is known in the art '892 (refer to office action marked on 07/19/2007), which discloses a metallurgical furnace installation for use in copper-smelting process. It includes a metallurgical furnace, a charging assembly for introducing anode scrap into the furnace through an opening (Abstract of '892). '892 discloses a bending member for pressing the leading end of the anode scrap (Claim 8 of '892) and the bending angle should be 10° to 45° (Col.8, line 26-34).

The requirement is still deemed proper and is therefore made FINAL.

Claims 14-18 are withdrawn from consideration as being directed to a non-elected group, and Claims 1-13 are pending for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-6, 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikoma et al (US 5,685,892, thereafter '892).

Regard to claims 1,9 '892 teaches an improved arrangements for charging anode scraps into a copper-smelting furnace such as a converting furnace (Col.1, line 8-15 of '892). '892 teaches the charging assembly includes a chute-sloping channel (or be called funnel-Refer to Fig. 4, Col.3, line 60 to Col.4, line 4 of '892). '892 further teaches feeding anode scrap sheets one by one by extension and retraction of a hydraulic cylinder (Col.4, line 15-20 of '892). '892 teaches a bending member for pressing the leading end of the anode scrap (Claim 8 of '892) and the bending angle should be 10° to 45° (Col.8, line 26-34). '892 further teaches when the bent leading end of the anode scrap reaches the melt in the converting furnace, the leading end tends to float in the melt due to the increase in the resistance

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exerted thereon and changes its posture gradually from a vertical one to a horizontal one. Thus, the anode scrap sheet is prevented from impinging against the furnace bottom (Col.8, line 6-25). Examiner notes that '892 does not explicitly teach the radius of curvature of about 1,000 to 3,000 millimeters as claimed. However the parameter of bending angle taught by '892 is convertible to radius of curvature. '892 teaches the similar bending technique to change the anode sheet shape for same purpose-feeding anode sheet in an essentially horizontal position as recited in the instant claim, therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to optimize the bending angle or radius of curvature as demonstrated in '892, for example 1,000 to 3,000 millimeters to get best feeding result, because the bending angle/radius of curvature is a result-effective variable in term of feeding result. SEE MPEP 2144.05 II.

Regard to claim 2, '892 teaches the chute secured onto the inner surface of the through -opening of the converting furnace. The chute is immediate vicinity of the reaction shaft of smelting reactor (Fig. 4,5 and 9; Col.3, line 60-63; Col.1, line 58-65 of '892).

Regard to claims 3, 4, 5, and 13, '892 teaches inclination angle of chute (with respect to horizontal line) may range from

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30° to 89°, but preferably from 38° to 60°(Col.5, line 57-59 of '892). And '892 further teaches jump rail is included in the charging assembly (Col.7, line 48-59 of '892). The jump rail arrangement is shown in figure 4 (90). From above arrangement and discuss, the angle of the inclination of the top part with respect to the horizontal level is large than that of the bottom part.

But '892 does not explicitly teach an angle between the top part and the bottom part of the feeding funnel is about 10 to 30 degree as claimed. However this angle is recognized as a result-effective variable in terms of feeding anode a generally horizontal position. This is evidenced by '892. '892 teaches jump rails may raise the anode scrap sheets from the inclined surface of the chute while the leading ends thereof continue to slide on the inclined inner surface of chute. In this manner, the anodes reach the melt in the converting furnace with a generally horizontal position (Col.7, line 48-59 of '892). It would have been obvious to one skill in the art to optimize the angle between the top part and the bottom part of the feeding funnel, for example, 10 to 30 degree to avoid anodes impinging against the furnace bottom (Col.7, line 48-59 of '892). See MPEP 2144.05 II.

According to the definition for the term of "trajectory-shifting element", it can be a jump rail or a corresponding bracket provided on the surface of the feeding funnel. '892 teaches jump rail in anode charging system for alter the trajectory of the anode as discussed above. A jump rail is a kind of guiding elements for adjusting the sliding direction of the anode.

Regard to claim 6, '892 teaches distance between lower end of chute and the melt may be designed from 500 to 2500 mm. This distance range overlaps the distance range recited in the instant claim.

Regard to claim 10, '892 teaches more than one scrap sheets could be charged into chute at the same time (Col. line 15-47 of '892).

Regard to claim 11, '892 teaches an anode grip potions are pointed upwards as anodes dropping into the reactor (Fig.5 and 6 of '892). '892 further teaches bend portion is directed upwards with respect to a direction of introduction of the anode scrap (Col.2, line 50-63 of '892).

Regard to claim 12, '892 teaches an outer shutter and an inner shutter are adapted to open and close independently of each other (Col.3, line 60 to 66).

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over '892 and evidenced by Murakami et al (US, 4,578,977, thereafter '977)

Regard to claims 7 and 8, '892 does not explicitly teach bending the anode by a four rolling rollers that are located above the feeding funnel and the diameter of rolling roller is 100 to 500 millimeters. As discussed in the rejection for the claim 1, '892 teaches similar bending technique to change the anode sheet shape with different bending angles for same purpose-feeding anode sheet in an essentially horizontal position as recited in the instant claim. Applying four rolling rollers to perform bending on metal is a well-known technique as evidenced by '977. '977 teaches two to four rolls selected from the group, the four rolling rolls are used for performing roll bending on shape metal (Abstract of '977). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to optimize the bending technique, for example, using four rolling rollers with diameters 100 to 500 millimeters and arrange the above the feeding funnel as demonstrated in '892 (Col. 8, Line 6-64 of '892) in view of '977 to avoid anodes impinging against the furnace bottom (Col.7, line 48-59 of '892). See MPEP 2144.05 II.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884.

The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY

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